O Trial Data

During Q3 2023 the Ministry of Health of the Russian Federation approved the start of 205 new clinical trials of all types, including local and bioequivalence studies. This represents a 35% year on year increase by the total number of studies.

The dominant type of clinical trials conducted across Russian sites in Q3 2023 were BE (Bio-equivalent Clinical Trials). The market share of BE studies raised from 68% to the unprecedent 80%. The market share of MMCTs (Multinational Multi-center Clinical Trials) collapsed from 11% to just 2% whilst the market share of Local Clinical Trials (LCTs) declined from 22% to 18%.

Breakdown of Clinical Trials by Type and Phase



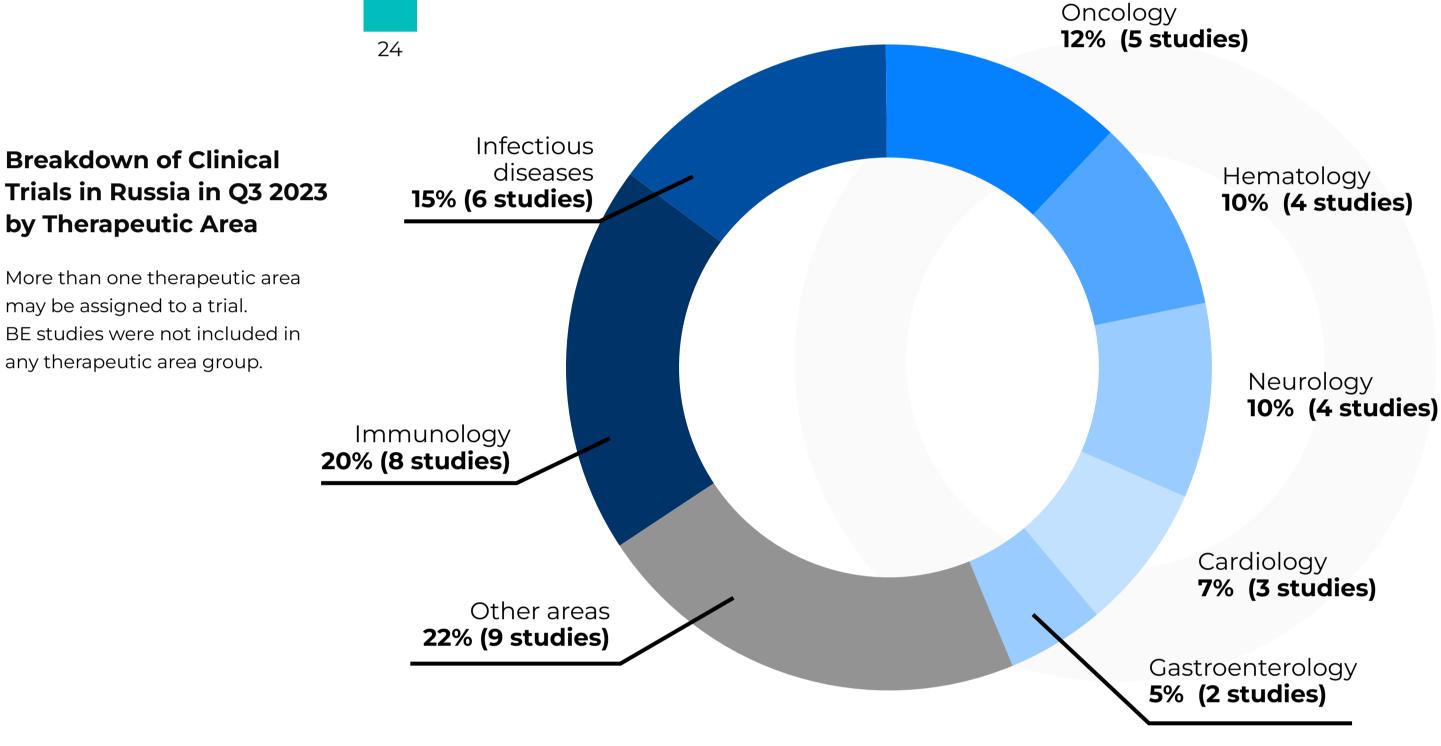
Percentage Breakdown of Clinical Trials by Type 100 90 80 70 68% 60 80% 50 40 30 22% 20 18% 10 11% 2% \bigcirc Q3 2022 Q3 2023

The most prevalent Phases of clinical trials conducted in Russian sites by total number of studies were both Phase I and Phase III – each with 39% share.

MMCT

BE

The largest number of clinical trials initiated in Russia during Q3 2023 were related to Immunology (8 studies), Infectious diseases (6 studies) and Oncology (5 studies). Other prominent therapy areas include Hematology, Neurology, Cardiology and Gastroenterology.



Sponsor Data

Clinical trials initiated in Russia during Q3 2023 were

sponsored by pharmaceutical companies from Russia and 11 foreign countries. The combined market share of international pharmaceutical companies involved in the Russian Clinical trials market increased from 18% to 25% of all studies.

Russian sites by international pharmaceutical companies in Q3 2023 was Phase III with 13% share among Phase I – IV studies.

The most prevalent Sponsor's countries of origin in Q3

The dominant Phase of Clinical trials conducted across

2023 were Russia (154 studies), India (23), Belarus (11) and Turkey (5). Other prominent countries include Hungary (3) and China (2).

(from I to IV) were not counted in the following ranking.

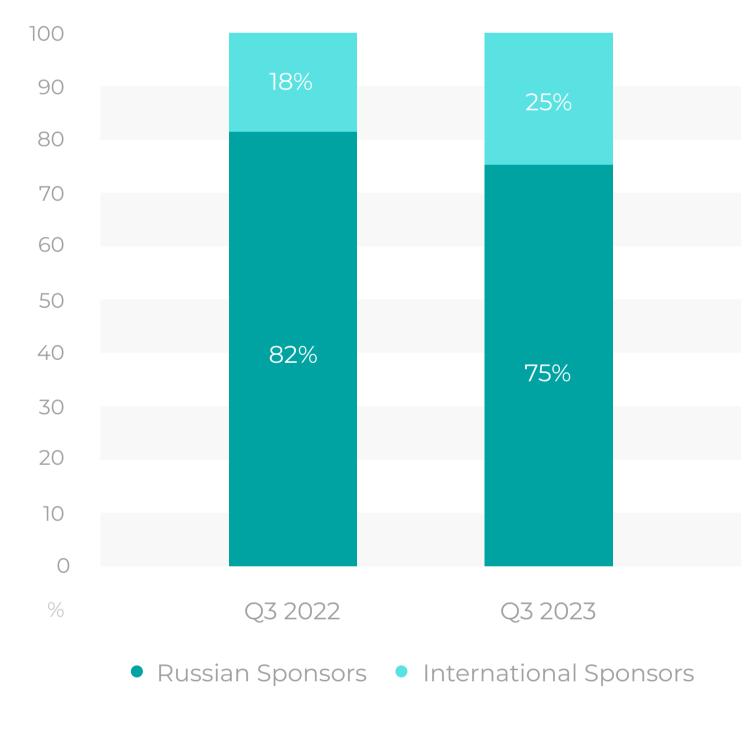
Top-10 International Trial Sponsors in Russia in Q3 2023

Observational trials and trials without FDA-defined phases

Nº	Company Name	Studies	Subjects
1	AstraZeneca	1	130
2	Giga Farm	1	120
3	Tonghua Anrate Biopharmaceutical	1	72
4	Lupin	1	60
5	Janssen	1	24
6	Bio-Thera Solutions	1	20
7	-	-	-
8	-	-	-
9	-	-	-
10	-	-	-
	Combined market share	15%	7 %
Combined market share shown as a percentage of both			
international and Russian sponsors. Bio-Equivalence (BE)			

studies were not included in this ranking.

Percentage Breakdown of Clinical Trials by Sponsor's Country of origin



Combined market share shown as a percentage of both international and Russian sponsors.

Top-10 Russian Trial Sponsors in Russia in Q3 2023

No	Company Name	Studies	Subjects
1	Grotex	4	663
2	Gamaleya Research Institute	4	340
3	Generium	3	544
4	GeroPharm	3	266
5	Polysan	2	886
6	Promomed	2	160
7	Mabscale	1	494
8	Elta	1	462
9	R-Pharm	1	372
10	Materia Medica Holding	1	370
	Combined market share	54 %	72 %

Subject Data

The overall number of subjects enrolled (or planned to be enrolled) in clinical trials initiated in Russia during Q3 2023 reached a total of 6,366 subjects – a 37% drop in comparison with the previous year when 10,184 subjects were enrolled.

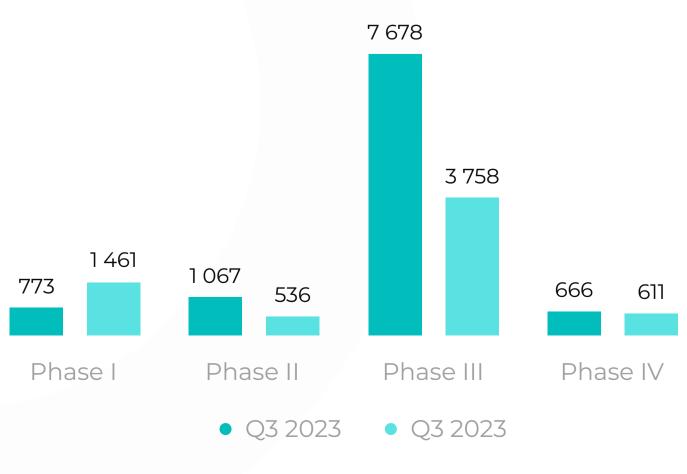
The most prevalent Phase of clinical trials by the number of participating subjects was Phase III with 59% of all subjects enrolled.

Studies indicated by sponsors as Phase I-II were counted as

Phase II; Phase II-III – as Phase III, Phase III-IV – as Phase IV.

7 678

Breakdown of number of Subjects enrolled by Phase



O Research Site Data

Top-5 Russian research sites (all studies) in Q3 2023

Nº	Site Name	City	No. Studies
1	Clinical Hospital № 9	Yaroslavl	25
2	I.M. Sechenov First Moscow State Medical University	Moscow	20
3	Yaroslavl Regional Clinical Narcological Hospital	Yaroslavl	18
4	Ecosafety	Saint-Petersburg	14
5	Clinical Hospital № 3	Yaroslavl	13

Combined market share of these sites

44%

OCRO Data

Top-10 CROs in Russia in Q3 2023 (Phase I - IV studies)

Observational Clinical trials and Clinical trials without FDA defined phases (from I to IV) were not included in this ranking.

Nº	Site Name	No. Studies	No. Subjects
1	Accellena	1	646
2	Benerix	1	494
3	OST Rus	1	312
4	Vita Aeterna	1	240
5	Medical Development Agency	1	200
6	MIK-Pharma	1	120
7	MDP-KIO	1	72
8	LABMGMU	1	38
9	Clinical Trials Center	1	36
10	-	-	-
	Combined market share	22%	34%

Top-5 CROs in Russia in Q3 2023 (BE studies)

Only BE (bioequivalence) studies

	cluded in this ranking.	Combined market share	22%	34%
Nº	Site Name		No. Studies	No. Subjects
1	Probiotec Medical Center		11	481
2	AX Clinical Trials and Consulting		5	232
3	National Scientific Center for Resear	rch and Pharmacovigilance	4	170
4	OST Rus		3	210
5	Medical Development Agency		2	120
	Combined market share of these	companies	15%	14%

O Regulatory Data During Q3 2023 the Center for Drug Evaluation and Ten of these 38 drugs were tested (or being studied) in

Research (CDER) of the U.S. FDA approved 38 new drugs, including 8 new molecular entities (NME); other approvals concerned new dosages, combinations or manufacturers.

clinical trials involving Russian sites. Source: FDA

Appr.Date	Drug (Active Ingredient)	Company
20.07.2023	Vanflytanda (Quizartinib Dihydrochloride)	Daiichi Sankyo
11.08.2023	Akeeganda (Abiraterone Acetate; Niraparib Tosylate)	Janssen
14.08.2023	Elrexfiobla (Elranatamab)	Pfizer
16.08.2023	Sohonosnda (Palovarotene)	Ipsen
16.08.2023	Abacavir; Dolutegravir; Lamivudinenda (Abacavir; Dolutegravir; Lamivudine)	Mylan
18.08.2023	Veopozbla (Pozelimab)	Regeneron
18.08.2023	Eylea (Aflibercept)	Regeneron
07.09.2023	Xalkorinda (Crizotinib)	PF Prism (Subsidiary of Pfizer)
26.09.2023	Bosulifnda (Bosutinib)	PF Prism (Subsidiary of Pfizer)
27.09.2023	Entyviobla (Vedolizumab)	Takeda

(EMA) approved 25 new drugs including 1 generic, 1 biosimilar and 11 orphan medicines. Appr.Date Drug (Active Ingredient)

In Q3 2023 the Committee for Medicinal Products for

Human Use (CHMP) of the European Medicine Agency

clinical trials involving Russian sites. Source: EMA

Company

Eleven of these 25 drugs were tested (or being studied) in

FDA inspections	Rosz	dravnadzor inspections
14.09.2023	Keytruda (Pembrolizumab)	Merck
14.09.2023	Takhzyro (Lanadelumab)	Takeda
14.09.2023	Adcetris (Brentuximab Vedotin)	Takeda
14.09.2023	Zilbrysq (Zilucoplan)	UCB Pharma
14.09.2023	Vanflyta (Quizartinib Dihydrochloride)	Daiichi Sankyo
14.09.2023	Enhertu (Trastuzumab Deruxtecan)	Daiichi Sankyo
14.09.2023	Ryeqo (Relugolix; Norethisterone Acetate; Estradio Hemihydrate)	Gedeon Richter
14.09.2023	Olumiant (Baricitinib)	Eli Lilly
14.09.2023	Catiolanze (Latanoprost)	Santen Oy
20.07.2023	Inaqovi (Cedazuridine; Decitabine)	Otsuka
20.07.2023	Tepkinly (Epcoritamab)	AbbVie

According to the U.S. FDA data, there were no FDA inspections conducted in a Russian investigative site

during Q3 2023.

03/10/2023 there were no Regulatory inspections

03/10/2023

conducted by Roszdravnadzor during Q3 2023.

According to the Roszdravnadzor quarterly report, as of

About The Orange Paper

The Orange Paper is a free publication produced by Synergy Research Group for the pharmaceutical industry since 2007. It pulls together data from numerous public sources into a single brief document to aid decision makers planning to conduct clinical trials.

close of each year.

All of the data within this document are actual on date:

It is produced quarterly, with an annual summary at the

About Synergy Research Group

successfully operating in Russia & Kazakhstan since 2002.

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From year to year our company is consistently in TOP-10 of market leaders by the numbers of conducted clinical

studies and enrolled patients. The high recruitment rates of the emerging markets combined with innovative technology allows Synergy to

offer our clients conduct faster, more cost-effective studies

we've set up the highest level of world-class quality both for SOPs and for final study data.

For all of clinical studies conducted by our company

We're continuously working on improvements of our SOPs, study risk management and IT infrastructure and replacing an outdated R&D strategies by novel, more efficient approaches to clinical research.



without sacrificing quality for our clients.